

54 *Mr. Birmingham, On Stars in Schjellerup's Catalogue.* XXXIV. 2,
Professors, the establishment of the new Savilian Observatory
would have been an impossibility in Oxford.*

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Oxford, 1873, December.

* An Astronomical Library will be a necessity for the complete equipment
of this new institution. The Professor will gratefully accept and acknowledge
assistance therein from the various Observatories and learned Academies of
Europe and America.

*On the probable Variability of some of the Red Stars in Schjellerup's
List, published in the Astronomische Nachrichten, No. 1591.
By J. Birmingham, Esq.*

(Communicated by the Rev. T. W. Webb.)

I find that the magnitudes of several stars in the above list
now differ considerably from the magnitudes recorded, while, at
least one star—No. 252—seems to have quite disappeared.

This star was twice observed by Sir John Herschel, and noted,
in the Appendix to the *Cape Observations*, as “extremely intense
ruby” and of the 8.5 magnitude. It does not appear, however,
in the *Bonn Catalogue*.

My first search for it was in July 1872, when I failed to see
it, and I was equally unsuccessful in several searches up to a
recent date. In October of the present year (1873) I wrote to
the Rev. Mr. Webb requesting him to look for it; but to him, and
also to Mr. Lynn and other observers at the Royal Observatory,
Greenwich, it was invisible. We are, therefore, presented with
two hypotheses: either the star must be a variable, or Herschel
committed a mistake in his observations. It may be remarked
that there is a star near the place of 252, well agreeing with
Herschel's description of the latter. The former is No. 251. It
was observed by Bessel as red, and rated by him of the 8th magni-
tude. The positions of both for 1872 are as follows:—

		R. A.					Decl.	
		h	m	s		°	'	"
251 . . .		21	37	59;	+	37	25	50
252 . . .		21	39	4;	+	37	16	38;

showing a difference of over 1 minute in R.A. and 9' in decl.

The grounds, therefore, for any suspicion of a mistake on the
part of Herschel might be said to be, the proximity of the places
of the two recorded stars, with their similarity of appearance as
described, and the absence of 252 from the *Bonn Catalogue*.

I am not aware whether the red stars in the Appendix to the
Cape Observations are to be considered as discoveries of Sir John

Herschel, or not. If he did not confine the list to his own stars, he would naturally include Bessel's very remarkable star in his observations; and, as he records only one red star in the locality, it would, on the foregoing supposition, add to the cause of suspecting that there was no second similar object about that place after all.

But how can we imagine that if Herschel's observations refer to Bessel's star, they would lead to results which must be considered very erroneous for an observer of his capability, particularly when he had Bessel's position available to check his work? And even if he had no such check to assist him, if he was ignorant (which is scarcely possible) of Bessel's observation, and viewed the star as a new one discovered by himself, still it would be most difficult to believe that he could commit such mistakes in his measurements. On the supposition that Herschel intended merely to give a list of his own red stars, there seems, in fact, to be no substantial ground for concluding that he did not see two pretty near each other, though he noted only one of them as a new discovery, and positioned it accordingly. The fact that neither Bessel nor Argelander seems to have noticed Herschel's star might be explained by the same variability that has caused its recent disappearance; but its invisibility to all observers except Herschel would seem to exclude it from the class of regular variables, as so many coincidences of minima would be unlikely to occur. It might, more probably, be one of those wonderful stars which have been observed only in a single brief period of extraordinary lustre. But whatever view may be taken of the matter, it is certain that no star can now be detected in the position of No. 252 in Schjellerup's Catalogue. I may add, that it is only one of many in that list that I have failed to find; but I bring it alone under notice as its non-appearance has been confirmed by observers about whose accuracy there can be no question.

I have seen several instances of apparent change of magnitude or colour among the stars of the same Catalogue, but I will here mention only two in which my observations have been amply verified.

No. 91 is described as very red, and of the 7.3 mag., but on February 1, 1872, it appeared to me as scarcely tinged with red, and from the $7\frac{1}{2}$ to the 8th mag. This observation was confirmed by Mr. Knott, who gauged it 7.5 to $7\frac{3}{4}$, and described it as "not a decided red, but rather golden with ruddy cast." On January 24, 1873, it appeared to me larger, and of a pale but a decided red. I then estimated it at 7 to 7.5 magnitude. In the case of this star the differences in the observed magnitudes may be within the limits of ordinary error of observation; but I feel pretty certain that at least changes in colour have taken place, and this, I should say, supports the probability of change in magnitude.

The second instance of change to which I will now refer, is found in No. 241. This is one of Lamont's stars, and is described as "rubra, 8.5 m.;" but on September 24, 1873, it appeared

to me an orange star, not less than from 6 to 6.5 magnitude. Since then I estimated it on different occasions as a little above or below those limits; but the differences are too small to be received as certain without actual measurement. The question of variability depends, therefore, on the accuracy of the original record. My observations have been borne out in the main by Mr. Lynn and other gentlemen of the Royal Observatory, Greenwich, who found the star in last October to be from 6 to 6.5 magnitude.

On the Double Star ν Ceti (Struve 281). By Capt. W. Noble.

Unless Admiral Smyth was more than ordinarily inaccurate in his description of this star, which is the 102nd object in the *Bedford Catalogue*, its minute companion must have increased most notably in magnitude since the date of the observation of it which he there records. (*Celestial Cycle*, Vol. II., p. 64.) Describing the aspect of this asterism at the epoch 1833.88, he says,—speaking of the little star 6" distant from ν , "this very delicate object is one of those marked by Σ 'difficilis,' and not without reason, for the *comes* can only be seen by glimpses on ardent gazing." It must be borne in mind that this account has reference to the appearance of the object under discussion in the late Admiral's 5.9-inches Tulley achromatic.

On page 211 of the 2nd edition of that most invaluable little book, Webb's *Celestial Objects for Common Telescopes*, I find its author saying with regard to the little companion, "Sm. saw this as a glimpse star. I found it easy with 5½ in 1861."

Now, on the night of Monday last, December 8, while examining the heavens for another purpose, I got ν Ceti into the field of view of the telescope, and, to my surprise, saw its companion instantly and steadily with a power of 154. Nay, so comparatively conspicuous was it, that, having viewed it under the higher power, I could see it perfectly well afterwards with one of 74.

My Ross object-glass has, as is pretty well known, an aperture of 4.2 inches only, while that of the Bedford Equatoreal was, as I have previously mentioned, of 5.9 inches in aperture; so that the ratio of the area of my object-glass to that of Admiral Smyth is only $\frac{17.64}{34.81}$, or roughly, one-half; and yet I can see at once and without difficulty, a star which he could only perceive "by glimpses on ardent gazing." It seems then to me an obvious inference that the object in question must be a well-marked variable.

Forest Lodge, Marcsfield, Sussex,
1873, December 11.